

WE CLAIM:

1. A modular light source system for forming a plurality of distinct light sources comprising:

at least one common tubular housing;

a plurality of LED based lighting members, each individual LED based lighting member comprising at least one LED element and selectively mounted in each tubular housing, wherein each distinct lighting source comprises one of the LED based lighting member;

a plurality of end caps selectively attached to the opposed ends of each tubular housing, wherein each distinct light source is formed of a pair of the end caps, whereby distinct light sources can be formed through replacement of the LED based lighting members and the end caps.

2. The modular system of claim 1 wherein each said end cap is threaded for attachment to the tubular housing.

3. The modular system of claim 1 wherein at least one LED based lighting member includes a single LED element of at least one watt.

4. The modular system of claim 1 wherein the distinct light sources include at least two light sources from the group of light sources including a fiber optic bundle light source, an axial light emitting flashlight, a radial light emitting lantern, and a right angle light emitting trouble light.

5. The modular system of claim 1 wherein the distinct light sources include at least three light sources from the group of light sources including a fiber optic bundle light source, an axial light emitting flashlight, a radial light emitting lantern, and a right angle light emitting trouble light.

6. The modular system of claim 1 wherein the distinct light sources include at least a fiber optic bundle light source, an axial light emitting flashlight, a radial light emitting lantern, and a right angle light emitting trouble light.

7. The modular system of claim 1 further including at least one LED based signalling members, each individual LED based signalling member comprising at least one LED element and selectively mounted in each tubular housing, wherein each LED based signalling member forms a signalling device when mounted on the tubular housing with a pair of the end caps.

8. The modular system of claim 7 wherein at least one LED based signaling member includes a single LED element of at least one watt.

9. The modular system of claim 8 further including a controller for flashing the single LED element of at least one LED based signalling member.

10. The modular system of claim 1 wherein at least one end cap is threaded to the tubular housing and includes a fiber optic bundle coupling for receipt of an end of a fiber optic bundle there in.

11. The modular system of claim 1 wherein at least one end cap is threaded to the housing and includes a power coupling for connection to an external power source through a power cord.

12. The modular system of claim 1 wherein a plurality of LED lighting members include a single LED element of at least one watt and a conical collimating optic is adjacent the single LED element.

13. The modular system of claim 1 wherein at least one LED lighting member includes at least two LED elements with each LED element being at least one watt.

14. The modular system of claim 1 wherein at least one light source is a flashlight wherein the LED based lighting member for the flashlight includes a LED element of at least one watt mounted to a mounting plate and a collimating optic adjacent the LED element, wherein a front end cap for the flashlight includes sealing members and a clear window, and wherein a spacer tube spaces the mounting plate appropriately.

15. The modular system of claim 14 wherein a rear end cap of the flashlight includes a spring biasing contact and a mounting loop for supporting the flashlight.

16. The modular system of claim 1 further including at least one battery holding tube received in the tubular housing and which houses batteries in an annular array.

17. The modular system of claim 1 further including at least one end cap having a manually moveable slide mount for adjusting the position of an optic relative to an optic on the LED element of the LED based lighting member, whereby the slide mount provides a light focusing mechanism.

18. The modular system of claim 1 wherein at least one end cap has three pivoting, locking legs to support the light source when the legs are deployed.

19. The modular system of claim 18 wherein each leg is pivoted about a pin connection on the end cap and moveable from a stored position adjacent the tubular housing, wherein each leg is generally perpendicular to the housing in the deployed position, and wherein a rearward end of the leg can be pushed into a receiving hole in the end cap to lock the leg in the deployed position.

20. The modular system of claim 1 wherein at least one end cap includes a radial, tubular window and a support that allows the light source to be hung in a desired location.

21. A fiber optic light source comprising:

a tubular housing;

an LED based lighting member comprising at least one LED element and selectively mounted in the tubular housing;

a pair of end caps selectively attached to the opposed ends of the tubular housing, wherein one end cap includes a fiber optic bundle coupling for receipt of an end of a fiber optic bundle there in.

22. The fiber optic light source of claim 21 wherein each said end cap is threaded for attachment to the tubular housing.

23. The fiber optic light source of claim 21 wherein the LED based lighting member includes a single LED element of at least one watt.

24. The fiber optic light source of claim 21 wherein at least one end cap is threaded to the housing and includes a power coupling for connection to an external power source through a power cord.

25. The fiber optic light source of claim 21 wherein the LED based lighting member includes a single LED element of at least one watt and a conical collimating optic adjacent the single LED element.

26. The fiber optic light source of claim 21 wherein the LED lighting member includes at least two LED elements with each LED element being at least one watt.

27. The fiber optic light source of claim 21 further including at least one a battery holding tube received in the tubular housing and which houses batteries in an annular array.

28. The fiber optic light source of claim 21 wherein one end cap has three pivoting, locking legs to support the light source when the legs are deployed.

29. The fiber optic light source of claim 28 wherein each leg is pivoted about a pin connection on the end cap and moveable from a stored position adjacent the tubular housing, wherein each leg is generally perpendicular to the housing in the deployed position, and wherein a rearward end of the leg can be pushed into a receiving hole in the end cap to lock the leg in the deployed position.

30. The fiber optic light source of claim 21 wherein the housing is an anodized aluminium tube with threaded ends for receipt of the end caps, wherein the housing is configured to accommodate different fiber optic couplings by replacing the end cap and fiber optic bundle coupling with an end cap having a different sized coupling.

31. The fiber optic light source of claim 21 wherein the LED based light member includes an LED array formed of a plurality of individual LED elements, a collimating optic positioned adjacent the LED array and a reflective optic positioned between optic and the fiber optic bundle coupling.

32. The fiber optic light source of claim 21 wherein one end cap includes a power connection and the source further including a power supply mount within the housing holding a power supply module 42 through which power is directed through the power coupling mounted in the rear end cap.

33. The fiber optic light source of claim 32 wherein the LED based light member includes a single high output LED element on a mounting plate, a conical collimating optic adjacent the LED element, and further including a spacer tube 38 that spaces and holds the mounting plate of the LED element and the optic from the front end cap.

34. A flashlight comprising:

a tubular housing;

an LED based lighting member comprising at least one LED element and selectively mounted in the tubular housing, wherein each LED element is at least 1 watt; and

a pair of end caps selectively attached to the opposed ends of the tubular housing.

35. The flashlight of claim 34 wherein each said end cap is threaded for attachment to an anodized aluminium tubular housing.

36. The flashlight of claim 34, further including additional end caps and LED based lighting members selectively attached to the tubular housing to form distinct flashlights, and wherein the distinct flashlights include at least two flashlights from the group of flashlights including an axial light emitting flashlight, a radial light emitting lantern, and a right angle light emitting trouble light.

37. The flashlight of claim 34, further including additional end caps and LED based lighting members selectively attached to the tubular housing to form distinct flashlights, and wherein the distinct flashlights include an axial light emitting flashlight, a radial light emitting lantern, and a right angle light emitting trouble light.

38. The flashlight of claim 37 wherein at least one end cap is threaded to the housing and includes a power coupling for connection to an external power source through a power cord.

39. The flashlight of claim 34 wherein the LED lighting member includes a conical collimating optic is adjacent the single LED element.

40. The flashlight of claim 34 wherein the LED lighting member includes at least two LED elements with each LED element being at least one watt.

41. The flashlight of claim 34 wherein the LED based lighting member includes mounting the LED element to a mounting plate and a collimating optic adjacent the LED element, wherein a front end cap for the flashlight includes sealing members and a clear window, and wherein a spacer tube spaces the mounting plate appropriately.

42. The flashlight of claim 41 wherein a rear end cap of the flashlight includes a spring biasing contact and a mounting loop for supporting the flashlight.

43. The flashlight of claim 34 further including at least one a battery holding tube received in the tubular housing and which houses batteries in an annular array.

44. The flashlight of claim 34 wherein one end cap has a manually moveable slide mount for adjusting the position of an optic relative to an optic on the LED element of the LED based lighting member, whereby the slide mount provides a light focusing mechanism.

45. The flashlight of claim 34 wherein at least one end cap has three pivoting, locking legs to support the flashlight when the legs are deployed.

46. The flashlight of claim 45 wherein each leg is pivoted about a pin connection on the end cap and moveable from a stored position adjacent the tubular housing, wherein each leg is generally perpendicular to the housing in the deployed position, and wherein a rearward end of the leg can be pushed into a receiving hole in the end cap to lock the leg in the deployed position.

47. The flashlight of claim 34 wherein at least one end cap includes a radial, tubular window and a support that allows the flashlight to be hung in a desired location.

48. The flashlight of claim 34 wherein one end cap has a window, a spacer tube and the LED based lighting member includes an LED array of three high output LED elements with associated collimating optics.

49. The flashlight of claim 34 wherein one end cap is a fiber optic bundle coupling adapter.

50. A flashlight comprising:

a tubular housing;

an LED based lighting member comprising at least one LED element and an adjacent optic that is selectively mounted in the tubular housing; and

a pair of end caps selectively attached to the opposed ends of the tubular housing, wherein one end cap has a manually moveable slide mount for adjusting the position of an optic relative to an optic on the LED element of the LED based lighting member, whereby the slide mount provides a light focusing mechanism.

51. The flashlight of claim 50 wherein each said end cap is threaded for attachment to an anodized aluminium tubular housing, and each LED element is at least one watt.

52. The flashlight of claim 50 wherein at least one end cap is threaded to the housing and includes a power coupling for connection to an external power source through a power cord.

53. The flashlight of claim 50 wherein the LED lighting member includes a conical collimating optic adjacent a single high output LED element.

54. The flashlight of claim 50 wherein the LED lighting member includes at least two LED elements with each LED element being at least one watt.

55. The flashlight of claim 50 wherein the LED lighting member includes at least three LED elements with each LED element being at least one watt.

56. The flashlight of claim 50 wherein a rear end cap of the flashlight includes a spring biasing contact and a mounting loop for supporting the flashlight.

57. The flashlight of claim 50 further including at least one a battery holding tube received in the tubular housing and which houses batteries in an annular array.

58. The flashlight of claim 50 wherein at least one end cap has three pivoting, locking legs to support the flashlight when the legs are deployed.

59. The flashlight of claim 58 wherein each leg is pivoted about a pin connection on the end cap and moveable from a stored position adjacent the tubular housing, wherein each leg is generally perpendicular to the housing in the deployed position, and wherein a rearward end of the leg can be pushed into a receiving hole in the end cap to lock the leg in the deployed position.

60. The flashlight of claim 50 wherein at least one end cap includes a radial, tubular window and a support that allows the flashlight to be hung in a desired location.

61. A signal light comprising:

a tubular housing;

an LED based signalling member comprising at least one LED element and an adjacent optic that is selectively mounted in the tubular housing; and

a pair of end caps selectively attached to the opposed ends of the tubular housing, wherein one end cap has three pivoting, locking legs to support the signal light when the legs are deployed.

62. The signal light of claim 61 wherein each leg is pivoted about a pin connection on the end cap and moveable from a stored position adjacent the tubular housing, wherein each leg is generally perpendicular to the housing in the deployed position, and wherein a rearward end of the leg can be pushed into a receiving hole in the end cap to lock the leg in the deployed position.

63. The signal light of claim 61 wherein at least one end cap includes a radial, tubular window and a support that allows the signal light to be hung in a desired location.

64. The signal light of claim 61 wherein at least one LED based signalling member includes a single LED element of at least one watt.

65. The signal light of claim 64 further including a controller for flashing the single LED element of at least one LED based signalling member.

66. The signal light of claim 64 wherein each end cap is threaded to an anodized aluminium housing.

67. The signal light of claim 64 wherein at least one end cap is threaded to the housing and includes a power coupling for connection to an external power source through a power cord.

68. The signal light of claim 64 further including at least one a battery holding tube received in the tubular housing and which houses batteries in an annular array.

69. A signal light comprising:

An anodized aluminium tubular housing;

one high output LED element mounted in the tubular housing; and

a pair of end caps selectively threaded to the opposed ends of the tubular housing, wherein one end cap has a radial window.

70. The signal light of claim 69 wherein one end cap has three pivoting, locking legs to support the signal light when the legs are deployed.

71. The signal light of claim 70 wherein each leg is pivoted about a pin connection on the end cap and moveable from a stored position adjacent the tubular housing, wherein each leg is generally perpendicular to the housing in the deployed position, and wherein a rearward end of the leg can be pushed into a receiving hole in the end cap to lock the leg in the deployed position.

72. The signal light of claim 71 wherein at least one end cap includes a support that allows the signal light to be hung in a desired location.

73. The signal light of claim 72 wherein the LED based signalling member includes a single LED element of at least one watt.

74. The signal light of claim 73 further including a controller for flashing the single LED element.

75. The signal light of claim 74 wherein each end cap is threaded to an anodized aluminium housing.

76. The signal light of claim 75 further including at least one a battery holding tube received in the tubular housing.

77. A lantern comprising:

a tubular housing;

an LED based lighting member comprising at least one LED element and selectively mounted in the tubular housing, wherein each LED element is at least 1 watt; and

a pair of end caps selectively attached to the opposed ends of the tubular housing, wherein one end cap has a radial window.

78. The lantern of claim 77 wherein each said end cap is threaded for attachment to an anodized aluminium tubular housing.

79. The flashlight of claim 77 wherein at least one end cap is threaded to the housing and includes a power coupling for connection to an external power source through a power cord.

80. The lantern of claim 77 wherein the LED lighting member includes at least two LED elements with each LED element being at least one watt.

81. The lantern of claim 77 further including at least one a battery holding tube received in the tubular housing and which houses batteries in an annular array.

82. The lantern of claim 77 wherein at least one end cap has three pivoting, locking legs to support the lantern when the legs are deployed.

83. The lantern of claim 82 wherein each leg is pivoted about a pin connection on the end cap and moveable from a stored position adjacent the tubular housing, wherein each leg is generally perpendicular to the housing in the deployed position, and wherein a rearward end of the leg can be pushed into a receiving hole in the end cap to lock the leg in the deployed position.

84. The lantern of claim 83 wherein at least one end cap includes a support that allows the lantern be hung in a desired location.

85. A user wearable LED light source comprising:

a tubular housing;

an LED based lighting member comprising at least one LED element and selectively mounted in the tubular housing, wherein each LED element is at least 1 watt; and

a pair of end caps selectively attached to the opposed ends of the tubular housing, wherein one end cap is securable to the user.

86. The light source of claim 85 wherein each said end cap is threaded for attachment to an anodized aluminium tubular housing.

87. The light source of claim 85 further including a separate battery pack spaced from the tubular housing supplying power to the light source.

88. The light source of claim 87 wherein the separate battery pack is worn by the user and includes a battery pack tubular housing and a pair of battery pack end caps on opposed end thereof.

89. The light source of claim 88 wherein the LED lighting member includes a conical collimating optic is adjacent the single LED element.

90. The light source of claim 88 wherein the LED lighting member includes at least two LED elements with each LED element being at least one watt.

91. The light source of claim 88 wherein the LED based lighting member includes mounting the LED element to a mounting plate and a collimating optic adjacent the LED element, wherein a front end cap for the flashlight includes sealing members and a clear window, and wherein a spacer tube spaces the mounting plate appropriately.

92. The light source of claim 87 wherein one end cap has a window, a spacer tube and the LED based lighting member includes an LED array of three high output LED elements with associated collimating optics.

93. A mounted LED light source comprising:

a tubular housing;

an LED based lighting member comprising at least one LED element and selectively mounted in the tubular housing, wherein each LED element is at least 1 watt;

a pair of end caps selectively attached to the opposed ends of the tubular housing; and

a clamp secured around the tubular housing securing the light source to a base object.

94. The light source of claim 93 wherein the base object is the handle bar of a bicycle whereby the clamp is configured to be secured to the handle bar of a bicycle.

95. The light source of claim 93 wherein each said end cap is threaded for attachment to an anodized aluminium tubular housing.

96. The light source of claim 95 wherein the LED lighting member includes a conical collimating optic is adjacent the single LED element.

97. The light source of claim 95 wherein the LED lighting member includes at least two LED elements with each LED element being at least one watt.

98. The light source of claim 95 wherein the LED based lighting member includes mounting the LED element to a mounting plate and a collimating optic adjacent the LED element, wherein a front end cap for the flashlight includes sealing

members and a clear window, and wherein a spacer tube spaces the mounting plate appropriately.

99. The light source of claim 95 wherein one end cap has a manually moveable slide mount for adjusting the position of an optic relative to an optic on the LED element of the LED based lighting member, whereby the slide mount provides a light focusing mechanism.

100. The light source of claim 95 wherein one end cap has a window, a spacer tube and the LED based lighting member includes an LED array of three high output LED elements with associated collimating optics.